COST COMPETITIVENESS

Steel sleepers are a cost competitive solution for most applications. Overall, costs are established by combining actual manufacturing costs with logistic and installation costs. Steel sleepers also represent excellent value over the whole life of the sleeper system due to the low maintenance costs.

Maintenance Costs include:
- Resurfacing/tamping (track geometry correction) - Steel sleepers can tolerate a greater level of imperfections in track condition/geometry and when installed properly, steel sleepers are more stable than alternatives in situations of moderate speeds (<80kmph) and moderate axle loads (<25t);
- Ballast top-up, usually done with resurfacing/tamping;
- Fastening maintenance, for loose or broken fastenings, and for timber, re boring and fastening replacement;
- Replacement of timber sleepers after 15 to 25 years.

WHOLE OF LIFE MAINTENANCE COST ESTIMATES FOR INTERMITTENT STEEL OR CONCRETE SLEEPERS

<table>
<thead>
<tr>
<th>NPV of Maintenance Activities (50 Years) Per KM</th>
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<tbody>
<tr>
<td>$80,000</td>
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<tr>
<td>$70,000</td>
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<td>$60,000</td>
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<td>$40,000</td>
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<tr>
<td>$30,000</td>
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<tr>
<td>$20,000</td>
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<td>$10,000</td>
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</tbody>
</table>

Source: Worley Parsons

OneSteel Manufacturing Pty Ltd | ABN 42 004 651 325 | www.onesteel.com
For product information: Sales Manager Rail Products, telephone (08) 8326 4604.
For sales enquiries: Sales Administrator Rail Products, telephone (08) 8326 4259.
Our Steel Sleepers

Steel sleepers are the support members that form part of the structure of the railway track. They are embedded into ballast and provide support for the rails above. The steel sleepers and fastening assembly is the sole together, maintaining gauge and rail position whilst resisting lateral and longitudinal movement of the train.

OneSteel Whyalla Steelworks manufacture steel sleepers under the Trak-Lok brand. Our Steel Sleepers are the result of over 30 years of research and development.

It is this commitment that enables the Trak-Lok range of steel sleepers to be seen as being the most versatile and technically advanced available today.

All our steel sleepers and fastening systems are Australian Made.

Quality Procedures

At OneSteel Whyalla Steelworks we have stringent quality controls, testing and inspection procedures for all our rail products. In 1999, OneSteel gained accreditation to ISO 9001 for our manufacturing operations and has maintained this accreditation since.

Benefits of Steel Sleepers

Choosing steel sleepers means your projects benefit from a quicker and lower installation costs and a reduction in the life cycle cost of the infrastructure.

A 38mm steel sleeper manufactured by OneSteel in the ‘LockIn’ has resulted in a range of great sleepers to meet modern operational demands, with track laying methods. These optimise the combination of sleeper and fastening, for efficient installation and minimum maintenance.

The principal benefits of steel sleepers are:

- Reduced labour requirement, leading to time and cost savings at installation;
- Lightweight design, leading to ease of handling and reduced transport costs;
- Improved track stability, therefore reduced maintenance;
- Environmental benefits due to recycling of steel;
- Well suited to ballast service because of lock-in shoulder fastening, adaptability, with bullet fastening, long lengths, and ease of fabrication;
- Steel sleepers can be cast as a monolithic solution, or interspersed with timber (replacing sleeper) to extend track life and lower maintenance costs.

Sales and Technical Services

When reviewing your rail and sleeper requirements, we are dedicated to developing optimal solutions that add value. We partner with our customers to ensure before and after sales service exceeds expectations and we operate with agility and speed.

At OneSteel Whyalla Steelworks, we have a team of technical experts; metallurgy and engineering, that are available to work with you on identifying product solutions, including product testing and performance.

A good example of this is the recent development of gauge convertible sleepers for this Victorian market in Australia. To “future proof” any major line upgrades, the customer wanted to be able to convert the line from broad to standard gauge if required.

OneSteel, in conjunction with the customer and金融机构 Rail Technology at Monash University, has been able to design a suitable sleeper and conduct extensive research, to gain an understanding of performance under standard and operating loads.

Product Range and Application

Steel sleepers can be used in a wide range of rail infrastructure projects and are commonly specified in greenfields or on the sleeper of choice, interspersed with other sleeper types, in forums or for special applications.

The Trak-Lok Steel Sleeper systems are manufactured from OneSteel standard “M” sleeper sections and incorporates the Trak-Lok® resilient fastening system that has been developed specifically for use with steel sleepers. Our Sleepers are manufactured and designed to meet all AS 1085.17 and AS 5000 Australian Standards.

Sections

We currently supply 3 different sleeper section thicknesses: 75mm, 85mm and 100mm, suitable for all rail gauges. The size of the sleeper will be dependent on the traffic applications, both now and into the future.

For new applications of steel sleepers, our technical experts will work with you to evaluate the track design and conditions; assisting you to develop the most economic and viable solution.

Fasting Systems and Accessories

The Trak-Lok® 2 resilient clip secures the rail to the sleeper in conjunction with the appropriate Trak-Lok ® “lock in shoulder”. These clips are manufactured to the highest possible standards from high silicon spring steel and are hot formed, quenched and tempered in a semi-automatic process.

The Trak-Lok fastening system also includes an optional range of insulation pads for various rail sizes that provides electrical isolation between rail and sleeper which ensures the correct operation of track signalling and traction current return systems.

Our fastening system also includes a large range of spacers to enable the use of smaller rail in a rail seat designed for larger rails.

Australian Made.

All our steel sleepers and fastening systems are available today.